

MALDON  
RURAL SANITARY DISTRICT.

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ANNUAL REPORT

OF THE

Medical Officer of Health

FOR

~ 1900, ~

BY

JOHN C. THRESH, D.Sc., M.D., D.P.H.

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MALDON :

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# MALDON RURAL SANITARY DISTRICT.

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## SUB-REGISTRATION DISTRICTS.

				Population 1891 Census
TOLLESBURY	(11 Parishes)	...	...	7,464
BRADWELL	(5 „ )	...	...	2,515
SOUTHMINSTER	(5 „ )	...	...	2,290
MALDON	(11 „ )	...	...	3,353
				<hr/> 15,622 <hr/>

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To the Chairman and Members of the Maldon  
Rural District Council.

GENTLEMEN,

In accordance with the requirements of the Local Government Board I have pleasure in submitting to you my report for the past year.

In previous years it has been necessary for me to point out that one of the chief sanitary requirements of the district was a supply of good water for the parishes on the exposed London Clay in the Southern portion of the district. Many schemes were considered but in 1898 one was decided upon and commenced, and the past year has seen it successfully completed. The numerous delays which have occurred appear to have been of advantage, as the scheme which has been completed is much more comprehensive than those considered earlier, and the supply of water is much larger than would have been the case had the nearer springs been utilized. The works are of such importance that I think a fairly full description should be placed on record. For the information

in this account I have to thank your Surveyor and Engineer, Mr. Keywood, who designed the works and superintended all the details until their completion.

The works are designed to supply the following parishes, viz :—Purleigh, Hazeleigh, Woodham Mortimer, Stow Maries, Cold Norton, North Fambridge, Latchingdon and Althorne. These have a population of about 2450 persons spread over an area of a little over 20,000 acres.

The water is derived from four natural springs arising near together at the outcrop of the London Clay in Woodham Walter parish. These springs are fed by the rainfall upon the gravel on the higher ground. The gathering ground or collecting area is of considerable extent, and the springs arise in a large pasture at the foot of a hill, and some 100 feet from the stream into which they discharge. Upon the gravel patch feeding the springs there is only one house, and this is nearly half-a-mile away. To protect the water from pollution 10 acres of ground have been acquired, and will be ample for the purpose.

The yield of water, at the time when all the springs round Danbury were lower than had been previously recorded, was 60,000 gallons per day, and I have no doubt that in a season of average rainfall they will yield at least 100,000 gallons per day.

The water has been repeatedly examined. After the heaviest rainfall it remains perfectly clear, and retains its original purity. It is very soft and in every respect excellently adapted for all domestic purposes.

The water from these springs is carefully collected and conveyed in glazed earthenware pipes with cement joints to a collecting reservoir near the lowest spring. This reservoir is entirely underground and is roofed in with concrete arches. It is 32 feet long, 16 feet broad, and 10 feet deep, holding 32,000 gallons.

The pumping station adjoins the reservoir, and is of brickwork covered with slates. The plant consists of two vertical boilers, with two horizontal duplex steam pumps. The duplication is so arranged that either boiler will supply steam to either pump. Each pump will deliver 6000 gallons an hour through the rising main, 1200 yards long and 5 inches in diameter, to the distributing or service reservoir, at an elevation of 110 feet above the pumps.

The service reservoir is constructed of Portland cement concrete and is only partly below the ground, but the upper portion is banked in, and is roofed in on concrete arches. The site is 211



feet above Ordnance Datum. It is situated at the extreme south of Woodham Walter parish, at the edge of Thrift Wood, and near the Chelmsford Road. The reservoir is 41 feet  $\times$  21 feet  $\times$  12 feet, and when full holds about 64,500 gallons.

The service main is 5 inches in diameter at first, and crosses several fields to the London Road, where a 3-inch branch diverges to supply a few cottages. The 5-inch main terminates at Baron's Lane, and a 4-inch continues to Howe Green, Three Ashes, Beacons Hill and Pale Pit. From this latter point 3-inch mains diverge to Latchingdon and Althorne and Fambridge respectively.

The mains are of cast-iron with spigot and socket ends. They are about 26 miles in extent, made up as follows :—4 miles of 5-inch, 3 miles of 4-inch, 18 miles of 3-inch, and 1 mile of 2-inch diameter. The whole of the mains were laid at a depth of 3 feet, and were tested before being covered in to double the pressure they would ever be called upon to bear. The pipes were also tested before being accepted from the makers.

Stand-posts are fixed at the ends of all the branches and at intervals along the route. They are of the Banjo pattern, with waste preventing self-closing action, and can only be opened by special keys. For the convenience of distant farms some special lofty posts have been erected so that water butts may be filled.

A map, shewing the position of the pumping station, reservoirs, and the distributing mains, will be issued in my County Report.

Comparatively few houses have as yet had the water laid on, but a code of Regulations has been prepared and approved.

A few details still require attention. There should be a small paved area round each stand-post and a channel to carry away the water. To keep the water fresh the mains should be flushed weekly by opening the terminal valves. Owners of houses should be urged to have the supply laid on. Care will have to be taken also in winter to prevent the water in the stand pipes becoming frozen.

The Local Government Board Enquiry was held on 29th September 1898, and a loan of £11,074 was sanctioned on January 11th 1899. The work was commenced in March '99, and the formal opening took place in June last.

The original estimate (£11,375) included only a galvanized iron engine shed and a single plant. The erection of a brick building with a chimney shaft, and provision of duplicate engines

increased the total cost to £13,874. An application is now being made to the L. G. B. for permission to borrow the additional sum. The total loan will exceed the assessable value of the 8 parishes, but the supply of water will so enhance the value both of farms and houses in the district, that doubtless the rateable value will speedily increase.

In several of the parishes building estates are being developed, and no doubt the population will gradually increase. The higher portions of the district supplied by the mains overlook the River Crouch and the Blackwater estuary and are well adapted for residential purposes. There are fair railway facilities, and the district is much frequented by persons fond of shooting, fishing, etc., as there is plenty of sport to be obtained.

The amount of water is abundant and will suffice for a much larger population.

The following Table gives the levels of the more important points and the distance from the pumping station.

	Height above O. D.	Distance in Miles.
Pumping Station	101 feet	0
Service Reservoir	211 „	$\frac{5}{8}$
Hazeleigh White Hart	166 „	$2\frac{5}{8}$
Cock Clarks	187 „	$2\frac{7}{8}$
Purleigh Lodge	171 „	$4\frac{1}{4}$
Beacon Hill	166 „	$5\frac{1}{2}$
Kit Hill	100 „	$7\frac{1}{8}$
Latchingdon	21 „	$7\frac{5}{8}$
Fambridge Ferry	14 „	$8\frac{7}{8}$
Althorne, Tyle Hall	174 „	$9\frac{3}{4}$

The following houses, farms, etc., are along the direct route of the mains.

372 buildings classed as Cottages.

52 „ „ Farms.

74 „ „ Houses.

The estimated revenue from the above is £400 0s. 0d. The balance for repayment of Loan, cost of pumping, etc. will be raised by the sanitary rate over the area supplied.

The charge will no doubt appear heavy for the first few years, but the expenditure was absolutely necessary, and in time, I feel certain, the works will prove remunerative.



There are other portions of the district which are urgently in need of a water supply, but as yet no scheme has been formulated which has appeared to be feasible. I refer more especially to Tolleshunt Knights, where water has to be carted from a distance, and to Tollesbury, where a large village of some 2,000 inhabitants is dependent upon a number of shallow wells most of which yield a very polluted water. This locality might be supplied from a deep well sunk in the immediate neighbourhood, or from springs situated at a distance.

Parts of Heybridge parish are badly supplied, and during the year a detailed inspection has been made and samples of water examined from every well. The following is an epitome of a report presented to the Council, Nov. 14th, 1900.

The parish of Heybridge is situated to the north of the Borough of Maldon from which it is separated by a tidal creek. The population is about 1650 (1623 in 1891) and of these about 1000 reside in the village, about 300 at Heybridge Basin (a hamlet a mile from the village), and the remainder are scattered over the parish.

The whole area is very flat, the subsoil being river gravel, and when the tides are high a good deal of ground is flooded.

The Basin population derives water from 3 deep wells, one of which has been acquired by the Council, and, by an expenditure of £150, made a satisfactory source of supply. Great difficulty was experienced in keeping out the river and subsoil water, but when completed and tested it was found that no water entered the sunk portion except that which came from the bore pipe. This water is very pure and of excellent quality. The other deep wells are far from satisfactory. The population here are chiefly employed on the river.

In the village portion of the parish most of the inhabitants are engaged at Messrs. Bentall's Ironworks and reside in houses belonging to the firm. At the works there is a deep well from which water is pumped into an elevated tank to supply the works. Mains are also laid outside the works to convey water to stand-posts, etc. for the supply of the employées and their families. Many persons unconnected with the works take water therefrom on sufferance. There are two other deep wells and numerous shallow ones, many of the latter being along Broad Street Green.

During the inspection 308 houses were visited and samples of water taken from the 25 different sources of supply (excluding the Ironworks supply).

Of the above, 191 houses are at present supplied with water from the Ironworks, as follows :—

15 have the water laid on the premises.

67 use the stand-pipe in Hall Road.

25 use the stand-pipe in Church Street.

68 use the stand-pipes at the Roothing, Flat  
Tops, and Stock Terrace Cottages.

16 use the stand-pipe erected for Well Terrace.

In many instances however and notably in the cases of cottages in Hall Road, Goldhanger Road, Mill Lane, and the banks of the Canal, the stand-pipes are at a considerable distance. In consequence water from the river or canal is often used for many domestic purposes.

The remaining 117 houses obtain water from wells or springs. These waters may be divided into three classes as the results of inspection and analyses :—

1.—Waters undoubtedly more or less polluted :

5 supplying 14 houses in Church Street and Holloway Road.

3       ,,       7       ,,       Goldhanger Road.

1       ,,       8       ,,       Black Cottages.

9       ,,       37       ,,       Broad Street Green Road.

2.—Waters of considerable organic purity :

1 at Hall Farm supplying 5 cottages.

1 supplying 8 houses in Goldhanger Road.

3       ,,       20       ,,       Church Street and Holloway Road.

3.—Waters of doubtful character :

1 in Mill Lane supplying 16 cottages.

1 at Flat Tops       ,,       2       ,,

Further samples of these will be examined.

It should also be noted that two of the best wells yield very limited supplies, at times not sufficient for all domestic purposes.

Mr. Bentall has expressed his willingness to extend the water mains and provide all the necessary water if a workable scheme can be formulated. The subject is now under consideration. The detailed Analyses will be found on the following page.



# Heybridge Water Supply—Results of Analyses.

SOURCE.	SURROUNDINGS.	APPEARANCE.	Grains per Gallon.					Parts per million.				No. of Houses supplied.	REMARKS.
			Hardness.			Nitrites.	Nitric Nitrogen.	Free Ammonia.	Organic Ammonia.	Oxygen Absorbed.			
			Chlorine.	Total.	Permanent.								
1. Well at Malting	Mr. Belsham's Malting.	faintly yellow : clear	39.2	9.0	3.0	nil.	.17	.00	.04	.52	8	Evidently a deep Well. Good.	
2. Well at Hall Farm	Close to house	yellowish : organic odour	34.3	6.0		nil.	.32	.48	.04	.56	5	Do. Water said to smell occasionally.	
3. Jenden's Well	In garden	faintly yellow : clear	10.9	17.0	5.0	nil.	.81	.10	.12	1.12	2	Impure. [Good. Limited supply.	
4. Williams' Well	In garden : unprotected : ground foul	yellow : clear	7.2	23.0	12.0	v. m. trace	1.39	.16	.24	2.28	6	Previously condemned. Very impure.	
5. Worraker's Well	In centre of common yard : quantity inadequate	colourless : clear	29.7	8.0		nil.	.38	.48	.04	.44	9	Deep Well. Water very limited. Good	
6. Mr. Smith's Well	In garden (can use a spring, No. 11)	yellow : clear	7.6	26.0	14.0	nil.	1.62	.00	.24	2.08	1	Very impure water.	
7. "Half Moon " Pump	In yard, near stables, &c.	yellow : clear	11.1	18.0		min. trace	.64	1.40	.12	1.44	2	Very impure water.	
8. Pump at Black Cottages	In garden	faintly yellow : dull	4.4	13.0		nil.	1.17	.04	.12	.44	8	An unsatisfactory water. [Good.	
9. Lewis' Pump	In lane	slightly yellow : dull	33.5	6.0		nil.	.17	.84	.04	.34	3	Deep Well. Said to smell occasionally.	
10. Pump in Mill Lane	In lane	slightly yellow : dull	34.5	8.0		nil.	.41	.80	.04	.44	16	Do. Nitrates too high. Doubtful. [safe.	
11. Spring near Roothings	In fields	colourless : clear	3.3	12.0	10.0	nil.	1.62	.02	.08	.48	3	Note high nitrates. Not protected. Un-	
12. Well near Flat Tops	In garden	colourless : dull	3.3	14.0	8.0	nil.	.69	.02	.10	.68	2	Not entirely satisfactory. Doubtful.	
13. Well at Jacob's Farm	In garden : pump in kitchen	yellow : dull	8.4	18.0		nil.	1.27	.01	.28	1.95	2	Impure.	
14. Brook near Draper's Farm	Ducks, poultry, cattle, &c.	brownish : turbid	3.2	9.0		nil.	.35	.03	.55	5.15	4	Very impure.	
15. Well at Draper's Farm	Pump in kitchen : Well in garden	very yellow : clear	15.6	28.0		nil.	1.65	1.25	.50	3.80	1	Ditto.	
16. Well at Mays' Malting	In field : covered and protected	yellowish : turbid	13.2	5.0		nil.	.23	.32	.05	.56	8	Probably a deep Well affected by subsoil water. Good.	
17. Pump at "Fairview"	Position of Well unknown : pump indoors	clear : colourless	4.3	13.0		nil.	.32	.00	.15	.84	1	The majority of these are shallow Wells, 10- 20 feet deep. All more or less unsatisfactory.	
18. Mrs. Davey's Pump	In garden	faintly yellow : clear	5.0	11.0		nil.	.93	.10	.12	1.16	7		
19. Cullum & Shelley's Well	In garden	yellowish : fairly clear	6.4	13.0		nil.	1.12	.08	.24	1.96	3		
20. Mrs. Robertson's Well	In garden : uncovered : cleaned out 20 years ago	yellow : clear	7.8	13.0		trace	1.62	.08	.16	2.00	9		
21. Public Spring, back of Wood's	In yard : dirty surroundings	yellow : turbid	7.2	14.0		nil.	.29	.30	.65	5.6	1	The majority of these are shallow Wells, 10- 20 feet deep. All more or less unsatisfactory.	
22. Emberson, Barbrook and Green's Well	Garden : covered : pump	clear : colourless	7.4	19.0		nil.	2.32	.02	.10	.88	3		
23. Emberson's Pump	In front of house : covered : pump	yellow : clear	32.4	14.0		nil.	.29	.06	.20	1.60	7		
24. Northlands Farm Well	In garden : uncovered	faintly yellow	4.4	13.0		trace	2.32	.08	.12	1.40	4	Very pure. Very pure.	
25. Blackhouse Farm Well	In front of house : covered : pump	faintly yellow	12.4	17.0		nil.	1.17	.02	.16	1.36	2		
26. Ironworks Well		clear and bright	36.4	5.0	1.0	nil.	.10	.01	.00	.48			
27. Public Well, Heybridge Basin		clear and bright	29.6	3.5	1.5	nil.	.03	.56	.02	.88			

The water supplies in other parishes are given in the following summary abstracted from a report recently prepared for the County Council.

**SOUTHMINSTER** (Population 1,450). A public waterworks was established here by the Council in 1894 and has been a great success.

Over a spring yielding some 30,000 gallons of water per day a covered tank holding 12,000 gallons has been constructed, and close by, upon a brick tower, 50 feet high, a wrought-iron tank holding 15,000 gallons has been fixed. The water is raised from the spring to the tank by a six h.p. engine, through 4-inch suction and rising mains. From the tank it flows through over 2 miles of mains, 4-inch, 3-inch, and 2-inch in diameter, to supply the village. The total cost, including the land and spring (which are in an adjoining parish), was slightly over £2000. The cost of pumping, including wages, is about £140 a year. The loan and interest is being repaid in equal half-yearly instalments, spread over a term of thirty years. An annual sum of £25 is paid for the water supplied to a malt kiln, and a small sum is paid out of the general rate for the water used for road watering, etc.; the balance is raised by a rate of 1s. 4d. in the pound levied on the users of the water.

During the last few months the underground tank has been enlarged, and in clearing the ground for this purpose more water was obtained, in fact the supply appears to have nearly been doubled. As there are other springs near I have suggested that the surplus water might be utilized for supplying the adjoining parish of Tillingham, which is much in need of such a supply.

The water is fairly soft and of excellent quality. The spring is fed by a large patch of gravel extending from Asheldham to Tillingham, and has been but little affected by the recent successive dry seasons.

**ALTHORNE** (313). Situated on the London clay. Formerly badly supplied from wells and ponds. It is now supplied by the mains from the Purleigh Waterworks, the property of the District Council.

**ASHELDHAM** (167). The village consists of a small group of cottages. Water is obtained from a public roadside pump and is of excellent quality. There are many scattered houses depending on a brook or ponds for water.

**BRADWELL** (999). Subsoil clay. Water is fairly abundant,



and derived from the public and numerous private pumps. The wells are shallow and nearly all show signs of pollution, some of them to a serious extent. The public pump at the end of the village yields a very good water.

COLD NORTON (183). Supplied from the Purleigh Waterworks.

CRICKSEA (127). Water is obtained from a single public pump.

DENGIE (279). Water is obtained chiefly from shallow wells, some of which show signs of pollution. There are also a few bored wells in the parish.

GREAT BRAXTED (361), LITTLE BRAXTED (125). Situated on gravel. There is a public pump for the largest group of houses, and also a tank which intercepts a spring rising in a wood half a mile away. Both parishes may be said to be fairly well supplied with water.

GOLDHANGER (524). Subsoil gravel. There is a public bored well with pump in the centre of the village which lets in polluted subsoil water. The well requires reconstructing and the District Council have the matter under consideration. There is also a bored well at the Rectory and several shallow wells; the water from the latter is not used for drinking purposes.

GREAT TOTHAM (722). Water is chiefly obtained from a public pump. There are also several private wells. Some of the inhabitants obtain water from a brook which is undoubtedly polluted.

HEYBRIDGE (1,623). Already referred to in detail.

HAZELEIGH (111). Supplied by the Purleigh Waterworks.

LANGFORD (194). Subsoil gravel and loam. Water supply chiefly from two public pumps. Cottages at a distance from these pumps use ditch water. Both wells yield doubtful water.

LATCHINGDON (464). Supplied by the Purleigh Waterworks.

LITTLE TOTHAM (323). The village is supplied with a capital spring which is piped to the roadside. The outlying houses use shallow wells or brooks.

MUNDON (263). Situated on clay. The village is practically dependent on a single private deep well. The Parish Council refused to be included within the district supplied by the Purleigh Waterworks.

MAYLAND (203). Subsoil clay. There is practically no



village and no public water supply. The only water available in most cases is rain, collected from roofs and in ponds. A few cottages obtain water from a pump in Althorne. One or two farms have bored wells.

NORTH FAMBRIDGE (151). Formerly supplied by a deep well which became contaminated by the invasion of sea water. Now the village obtains water from the Purleigh Waterworks.

PURLEIGH (858). The greater portion of the parish is supplied from the Purleigh Waterworks. Some farms and isolated cottages on higher ground have not obtained this supply, and have in some cases to go nearly a mile for water, or use rain water.

STOW MARIEÛ (176). Supplied by the Purleigh Waterworks.

STEEPLE (460). The water supply is from two bored wells belonging to the District Council; one of these appears to let in a little subsoil water. Water is carted long distances (two miles or more) from these wells.

ST. LAWRENCE (189). Houses very scattered. Water is obtained from shallow wells or from ditches.

TILLINGHAM (954). Is supplied with water from three public pumps and a number of shallow wells. The public pumps yield a fairly good water, but the supply has become very short in recent summers, although the wells have been deepened. A better supply is an urgent necessity.

TOLLESHUNT MAJOR (405). Subsoil loam and gravel. There is a public well and spring. A few of the houses have wells and pumps, and others have rain water tanks. Some of the private wells show signs of pollution.

TOLLESHUNT KNIGHTS (480). Soil and subsoil clay. There is no village. At Tiptree Heath water is obtained from springs and shallow wells, but the chief source is from ponds and brooks. The brook principally used for this purpose was polluted in 1899, and water had to be carted from a distance. Water is now being carted weekly to parts of the parish at the cost of the Parish Council.

TOLLESHUNT D'ARCY (870). The whole village is supplied by shallow wells, very many of which are polluted. In 1891 sanction was obtained from the Local Government Board to obtain a public supply, but the Parish Council refused to adopt

the scheme, and it has been abandoned. The village is on a very circumscribed patch of gravel, which prior to the sewerage of the village was much polluted. It contains plenty of water but the character is very unsatisfactory. Many people cart water from a spring at Spring Farm.

TOLLESBURY (1,730). Subsoil loam and gravel. There are two public wells, one of which yields a very polluted water. There are also many private wells of a similar character. The parish is on a patch of gravel yielding water fairly freely, but it is highly contaminated. Notwithstanding this the parish is the healthiest in the Maldon Union.

When the proposed light railway from here to Kelvedon is completed, the town is certain to develop, and a proper water supply will be an absolute necessity. There are difficulties in the way of obtaining such a supply at a reasonable cost, but the matter should receive the serious attention of the Rural District Council.

ULTING (165). There is no village; subsoil gravel. The limited water supply is chiefly derived from springs.

WOODHAM MORTIMER (298). Supplied by the Purleigh Waterworks.

WOODHAM WALTER (491). Chiefly supplied by springs. Brook and well waters also used; some of these latter are unsafe.

WICKHAM BISHOPS (473). The principal supply is from a spring, over which a pump has been fixed. There are also private wells, some of which are polluted. The village stands on one of the highest hills in Essex.

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The sanitary condition of Goldhanger has again received much consideration, but matters remain practically as they were when referred to in my last report. Mr. Keywood and myself met certain members of the Parish Council and afterwards a report was submitted.

The recommendations contained therein were—

- (a) To deepen the sunk portion of the parish well, which is bored from the bottom, 10 feet, and line the whole with earthenware tubes 42-in. in diameter. As the water level is some 24 feet down and is easily reduced by pumping, a deep well pump was recommended. The estimated cost is £100.
- (b) To lay down a sewer so as to divert the sewage from the ditches, and treat it upon a piece of land lying between the village and the river.



The report containing these recommendations was sent to the Parish Council early in July, but no decision has been arrived at by that Council, and the matter has been allowed to remain in abeyance.

I feel it my duty to point out that the responsibility of providing a proper water supply and system of drainage devolves upon the District Council. The sanction of the Parish Council is not necessary. As a matter of courtesy it is desirable to obtain such sanction, but where sanitary improvements are pressing, the Parish Council should not be permitted to cause unnecessary delay.

The drainage of Lower Althorne has at length been improved, but it is too early as yet to say whether the result will be quite satisfactory. Some flushing arrangement will probably be required.

The plans for the sewage disposal works at Tollesbury have been approved by the Local Government Board, and a loan sanctioned. The works however have not yet been commenced.

Minor improvements in drainage and water supply have been made in several parishes. At Tolleshunt D'Arcy the outfall drain from the sewage irrigation area has been carried to some distance so as to discharge into another ditch. This was necessary because the owner of the ditch adjoining and bounding the irrigation area threatened an action for pollution. Since the diversion no effluent whatever has entered his ditch. The land is gradually improving in condition and is better managed, the result being that a satisfactory effluent is now produced. Although discharged into a roadside ditch I have never observed any indication of a nuisance being caused thereby nor have I received a single complaint.

The small irrigation area at Tillingham, which has been in use for very many years, gives no trouble and costs the Council nothing. Obviously therefore no system of biological treatment could give better results. I doubt whether they will ever give as good.

In my last report I referred to the want of cottages at Bradwell. Upon receipt of a request from the Parish Council, that your Council would put in force your powers under the "Housing of the Working Classes Act," an application was made to the County Council for permission to adopt Part III of the Act. An enquiry was duly held and the gentlemen, selected to hold it subsequently, presented the following report to the County Council.

REPORT of the Two Members of the PARLIAMENTARY COMMITTEE appointed to hold a Public Enquiry at



BRADWELL-ON-SEA, into the application of the MALDON RURAL DISTRICT COUNCIL for permission to adopt Part III of the "Housing of the Working Classes Act, 1890."

1. As the application is the first of its kind in the County of Essex, and any decision which the County Council may adopt, is likely to influence the conduct of other Rural District Councils within the County, we think it right to make a full report, as there is little doubt that the conditions which exist in Bradwell-on-Sea exist in many other places also.
2. The Enquiry was held in the Elementary Schools on Saturday, March 10th, and there was a good attendance of the larger Ratepayers, including the Rector, the County Councillor for the District, some of the Rural District Councillors, and some of the Parish Councillors, but the labouring class was almost unrepresented.
3. Prior to the opening of the enquiry we inspected a number of cottages under the guidance of Dr. Thresh, who is Medical Officer of Health for the District, as well as for the County. The first dwelling visited was a vile place; a wooden building, in wretched repair, having only two rooms (one upstairs and one down), no scullery of any sort, and no sink; with an open grate, without an oven, as the only cooking place; a small patch of garden and a privy completed the accommodation for which 1/6 weekly rent was being paid. The next cottage of similar construction, though scrupulously clean, was in even worse repair, the upper room being uninhabitable; the widow occupying it had only made the lower room habitable by papering the walls to keep the wind and rain out. We visited other cottages, not so bad as these, but nevertheless much out of repair, which would have been condemned by Dr. Thresh, if there were any other place for the occupants to go to. We saw several others unoccupied, and more or less in ruins—their construction having been of the flimsiest character and repair out of the question.
4. A detailed description of every cottage in the parish,

shewing the accommodation, number of occupants, and its condition, was handed in at the Enquiry by Dr. Thresh, and some further particulars concerning the unoccupied cottages have been furnished since at our request. A tabulated summary of this information is appended hereto.

5. Plans for 12 cottages were submitted by the Surveyor, on behalf of the Maldon Rural District Council, and the approximate cost estimated at £2,500, including the land, but no site has been determined upon. No exact estimate of the annual expenditure likely to be entailed by this scheme was submitted to us, but it was proposed to let the cottages at 3/- per week, and it was thought this would involve an annual loss of about £50. From calculations made by ourselves, however, we arrive at the conclusion that, with a rent as low as 3/- per week, the annual loss is likely to be even greater, and probably at least £80.
6. It was explained, on behalf of the Rural District Council, that it was doubtful if any higher rent than 3/- could be paid by any of the labouring class, and certain persons present urged that even this figure was too high, and that only 1/6 per week could be paid.
7. This brings us to the crux of the whole difficulty. Nobody can build a decent cottage to let at 1/6 per week. Many of the cottages attached to the farms, and let to the labourers employed thereon, are undoubtedly let at a rent much below their real value. One case of this sort came to our knowledge in detail, during the course of the Enquiry. Two cottages had been built by the landowners, for a farmer, at a cost of £400, the farmer paying them rent at 4 % on the outlay, as well as paying rates and taxes, and keeping them in repair. We calculate that this involved him in an annual expenditure of about £22, equal to about 4/6 per week for each cottage, but he only charged his men 1/- per week for each of them. In other words, the men's real wages were 3/6 per week higher than their nominal

figure, and he succeeded in retaining his men without appearing to break the local wages rate.

8. If the farmers would charge a rent representing the real value, and pay a proportionately higher wage, there might be some chance of private enterprise stepping in to provide the necessary cottages, but the present system destroys private enterprise, and if it be persisted in, the Housing conditions in places like Bradwell must continue to grow worse, and the tendency towards the depopulation of the rural districts be increased.
9. On the other hand, if the Local Authority provide Housing accommodation for the agricultural labourers at rents suitable to their present wage, it *must* involve a heavy loss to the rates, the burden of which will fall, not merely on the owners and occupiers of the farms where the labourers work, but also on the professional man, the small shopkeeper, and others forming the general body of ratepayers in the district. In other words, farm labour will be subsidised at the public expense. But though this may form an argument for altering the incidence of the burden, its consideration does not help to meet the present difficulties, and the mere fact that the loss will fall on the general body will tend rather to retard necessary action by Public Authorities than to encourage rash speculation by them, and there appears therefore to be little reason to exercise a restraining influence, when such a case comes before us, well supported by local opinion.
10. There can be no doubt that such exists in this district. The Parish Council of Bradwell are anxious for the adoption of the Act, and they are strongly supported by the Rector, who is himself the owner of the living and a considerable ratepayer. The Rural District Council of Maldon have adopted the proposal, and are the applicants for the County Council's permission to move in it.
11. On the other hand, the farmers, with one exception, who spoke at the Enquiry, were opposed to the scheme, apparently on two grounds, (*a*) that their



men could not pay a rent of 3/- weekly, and (b) that any probable site was likely to be too distant from their own farms to be of use to their own men. One ratepayer objected *in toto*, declaring boldly that no more cottages were required, and that two of his own were empty. With regard to the assertion that more cottages are not required, we can hardly think that, if such were the case, the farmer already mentioned would have gone to so much expense to induce his landlords to erect two new cottages.

12. Some evidence was adduced to shew that certain bargemen, earning better wages than the agricultural labourers, might probably be glad to take the proposed new cottages at rents involving the parish in a smaller loss than shewn by the Surveyor's estimate, and that, in such case, the cottages now occupied by them would become available for other families earning less.
13. After carefully considering the whole of the facts, we are satisfied that the cottage accommodation in Bradwell-on-Sea is inadequate, and that the conditions under which many of the labouring class are compelled to live are conducive neither to morality nor to good health.
14. In our opinion accommodation is necessary in Bradwell-on-Sea for the Housing of the Working Classes, and there is no probability that such accommodation will be provided without the execution of Part III of the Act; and having regard to the liability which will be incurred by the rates, it is, in our opinion, under all the circumstances, prudent for the said Maldon Rural District Council to undertake the provision of the said accommodation, and we recommend that the Certificate asked for be granted accordingly.
15. We think the burden of the expenses should be borne by the contributory place of Bradwell-on-Sea as general expenses under the Public Health Acts, being satisfied that the circumstances of the contributory place and of the rest of the District render such limitation just.
16. We are of opinion, by reason of the date of the next

ordinary election of Members of the Maldon Rural District Council and otherwise, that Section 55 (1) (a) of the Act should not apply, and that the Rural District Council should be authorized to adopt Part III of the Act forthwith as a case of emergency.

HERBERT E. BROOKS,

D. J. MORGAN,

Members of the Parliamentary Committee of the  
County Council of Essex.

Dated this 10th day of March, 1900.

## SUMMARY OF DETAILED RETURN OF COTTAGE ACCOMMODATION AT BRADWELL-ON-SEA.

### OCCUPIED—

Cottages having only 1 bedroom ..	22	Number of occupants ..	45
„ „ 2 bedrooms ..	77	„ „ ..	287
„ „ 3 bedrooms ..	22	„ „ ..	113
	<u>121</u>	„ „ ..	<u>445</u>

UNOCCUPIED COTTAGES (see below) .. .. 22

## CHARACTER OF THE ACCOMMODATION.

### OCCUPIED COTTAGES—

Summary of Surveyor's description.	Cottages with 1 bedroom.	Cottages with 2 bedrooms	Cottages with 3 bedrooms	Total.
In good condition .. ..	3	8	5	16
In fair condition .. ..	8	25	9	42
Generally fair, but defective in parts ..	..	11	1	12
Not very good .. ..	..	1	..	1
Unsatisfactory .. ..	..	5	..	5
Old .. ..	4	2	1	7
Old and defective .. ..	..	4	..	4
Old and damp .. ..	2	5	2	9
Damp and defective .. ..	1	3	..	4
Lets the wet in .. ..	..	1	..	1
Very defective .. ..	..	1	..	1
Old and dilapidated .. ..	..	2	1	3
Very draughty .. ..	1	..	..	1
Looks absolutely dangerous .. ..	..	..	1	1
Dry rot .. ..	..	1	..	1
No comments .. ..	3	8	2	13
	<u>22</u>	<u>77</u>	<u>22</u>	<u>121</u>

N.B.—Of these, 11 are known to be overcrowded.

## UNOCCUPIED COTTAGES—

In fairly good condition; tenants just left, will be re-occupied directly ..	4
In fair condition, but very small .. .. .	2
Defective; insufficient bedroom accommodation; unfit for occupation, but under repair .. .. .	1
Fairly good outside, but damp; late tenants unwell .. .. .	1
Out of repair; only one bedroom .. .. .	1
Out of repair; unfit for occupation .. .. .	1
Old, dilapidated; only one bedroom .. .. .	3
Dilapidated; unfit for occupation .. .. .	2
Dilapidated; falling down; unfit for occupation .. .. .	7
	<hr/>
	22

The report was adopted by the County Council on July 3rd. Upon receipt of this report the Bradwell Parish Council undertook to find a suitable plot of land for the erection of the cottages, but as yet they have been unsuccessful.

This is another matter which your Council should now take in hand, since it is the duty of the District Council and not of the Parish Council to provide the cottages. It may have been considered probable that signs would have been shewn of private enterprise supplying the much felt want, but there are no indications of anything of the kind. Meanwhile the cottage accommodation in this and a few similar parishes is becoming, if possible, worse and worse.

## Isolation Hospitals.

This subject has also received consideration, and in this case the apparent delay has not been without its advantages. As I have previously pointed out, it is practically impossible to make one hospital serve the whole district. A suitable area of land has been acquired at Asheldham for a hospital for the southern portion of the district, and an arrangement has been made for the purchase of a site for the northern district. Within the last month, however, certain combinations have been practically decided upon, which, if effected, will be a great advantage to all concerned.

The first combination will include Maldon Borough and the following parishes in the Rural District, viz.:—Tollesbury, Tolleshunts D'Arcy, Major and Knights, Goldhanger, Great and Little Totham, Great and Little Braxted, Wickham Bishops, Langford, Ulting, Heybridge, Woodhams Walter and Mortimer, Hazeleigh, Purleigh, and Mundon. This combined district for hospital purposes will have to be formed by order after receiving the sanction of the Local Government Board, and both the Maldon



Town Council and the Rural District Council have passed resolutions agreeing to this combination on the following conditions:—

- (a) That the Hospital Committee consist of nine elected members, five being elected by the Rural Council and four by the Urban Council, with the Mayor of the Borough and the Chairman of the Council as *ex officio* members.
- (b) That all structural and establishment expenses be borne in the proportion of five-ninths by the Rural District, and four-ninths by the Borough.

There is a tacit understanding that the proposed Hospital shall be at Heybridge.

The second combination will include the Urban District of Burnham-on-Crouch, and the following parishes in the Rural District:—Southminster, Asheldham, Dengie, Bradwell, St. Lawrence, Steeple, Althorne, Mayland, Latchingdon, Stow Maries, Cold Norton, North Fambridge, and Cricksea. The suggestion is that Burnham should bear one-third of the structural and establishment expenses, and the Rural District two-thirds, and that the representation on the Hospital Committee shall be in the same proportion. The Rural Council have adopted this suggestion, and as County Medical Officer of Health I have recommended Burnham also to adopt it. Their decision is not yet known, but as the County Council will insist upon Burnham providing accommodation, it is to be hoped that a combination of this character will be effected.

Plans have been prepared for both Hospitals, but may require some modification to meet the altered circumstances. However, if the combined districts are formed, the Committees elected will not be bound to accept plans previously prepared for either district.

The want of such Hospitals has been felt on more than one occasion during the year. Temporary Hospital Tents are no doubt very serviceable in emergencies, but their utility cannot be compared with that of permanent structures.

The Hospital Tent was erected once during the year at Goldhanger, and by its use we were enabled promptly to isolate a number of patients, and so prevent what certainly threatened to be a serious outbreak.

### Systematic Inspections.

Every parish in the District has been systematically inspected at least once during the year. The work is so arranged that a

certain number of parishes are visited each month, and, whilst the Inspector notes the various nuisances, the general sanitary condition is noted by me.

Mr. Keywood's summary of work done by him as Inspector of Nuisances is appended. Unfortunately as Mr. Warne, who acted as Inspector of the Southern Division, obtained another appointment in the Autumn, such a summary for his district cannot be given.

There is undoubtedly a general improvement marked by the decreasing number of nuisances discovered. Complaints are rarely received, nearly the whole of those reported upon being found during inspection.

The district contains a large number of very old cottages, difficult to maintain in habitable repair. These do not improve as years roll on, and each year sees a certain number voluntarily closed by the owners as being beyond repair. Most unfortunately very few new ones are being erected, as they cannot be built at such a price as to render the investment remunerative. A certain amount of overcrowding certainly exists, but very few cases occur in which the Council can interfere, although there are very many families living under conditions which must efface all trace of modesty and conduce ultimately to immorality, if not to actual crime.

Many nuisances arise from cottages having been erected on pieces of roadside waste with little or no ground at the rear. The privies and ashpits have to be very near the cottages. By more frequent inspection, and by the substitution of pail or earth closets for the old privies, great improvements have been effected, but the condition still leaves much to be desired.

Few nuisances arise from the keeping of animals. In fact I find that in proportion to the population more animals, pigs, fowls, rabbits, etc. are kept in many towns than in our rural district. This is a subject well worthy the consideration of those interested in the prosperity of the country generally, but scarcely comes within my purview as Medical Officer of Health.

The general condition of many of the private wells is far from satisfactory, chiefly arising from imperfect construction, defective pumps, want of paving around, or of a drain to carry away the waste water, and from being placed in gardens which are highly manured, often with human excrement, etc. Very few of them yield a water which can be considered pure and safe, yet it is often



impossible to obtain a better supply. For example, at Tolleshunt Major an attempt was made to obtain a supply which should be under the control of the Council, but the site selected yielded a very impure water, and the only good water is a small spring or private pond at one end of the village. Possibly this may be utilized. At Ulting a scheme was mooted for piping a spring to the principal group of houses, but has not yet been carried out.

More care is exercised in connection with the supplies to new houses before a certificate for occupation is granted, but it is worth consideration whether a better construction should not be insisted upon. I think that with a very little additional expense it would be possible to decrease the risks of pollution. Glazed earthenware cyclinders might be substituted for the dry steining, the top should be properly domed over and be made watertight, and the suction pipe be flanged and so inserted as to prevent surface water gaining access along the track of the pipe. A code of regulations could be drawn up and an intimation given to each person sending in plans, that the water supply would not be considered satisfactory unless the regulations were complied with.

Accumulations of refuse are very common, few houses having any kind of receptacle for ashes or house refuse, save in the more populous parishes such as Heybridge, Tollesbury, and Southminster, where a public scavenger is employed. The usual plan is to throw the refuse into a hole dug in the garden. If this hole were at a distance from the cottage, and a little earth were sprinkled over occasionally, this mode of disposal would rarely cause a nuisance, but too often the hole is at the nearest point to the back door, and serves as the receptacle for liquid slops as well as ashes. Attempts are made to educate the people by recommending them to use the dry ashes for covering the excreta in the pails or cesspits, and to distribute the slops uniformly over the garden, but ease is considered before health, and the present existing insanitary conditions are likely to continue. Slaughter Houses and Bake-houses are found generally in fairly satisfactory conditions. Cowsheds vary very much. The more modern ones are satisfactory, but some of the older ones leave much to be desired. I hope the introduction of the new water-supply will lead to improvements.

The outfall to the Southminster sewer in Pandole Wood has not as yet been improved, but an arrangement is being entered into with the Charterhouse to enable the Authority to remove the outfall and construct small settling and filter tanks.



The Brook at Tiptree has received particular attention since it was discovered to be occasionally polluted by the sewage from the Fruit Preserving Works. The outfall arrangement however has been modified and a large area of land can now be irrigated, so that with ordinary care no further pollution should occur.

Some unsound fruit and fish were seized at Southminster, but no prosecutions followed.

### Alteration in Sanitary Administration.

One of the Inspectors having resigned, the Council have decided that Mr. Keywood shall discharge the duties of Inspector and Surveyor for the whole district, and another official has been appointed as Road Surveyor. This is satisfactory, inasmuch as it allows Mr. Keywood to give his whole time to sanitary matters, and doubtless by help of an assistant he will be able to discharge the duties efficiently. The change has necessitated a re-arrangement of the parishes for systematic inspection. They are now grouped as under:—

FOR INSPECTION IN—		
January	..	Woodham Mortimer and Woodham Walter.
February	..	Mundon, Latchingdon, and Mayland.
March	..	Heybridge, Langford, and Ulting.
April	..	Hazeleigh, Purleigh, Cold Norton and Stow Maries.
May	..	Little Totham, Goldhanger, Tolleshunt D'Arcy, and Tollesbury
June	..	Bradwell, Tillingham, and Dengie.
July	..	Tolleshunt Major and Tolleshunt Knights.
August	..	Steeple and St. Lawrence.
September	..	Great and Little Braxted.
October	..	Southminster and Asheldham.
November	..	Great Totham and Wickham Bishops.
December	..	Fambridge, Althorne, and Creeksea.

Summary of Work done through the Sanitary Inspector in the Rural District of Maldon during the year ending 31st December, 1900.

						Total No. for year.
1	Complaints received	..	..	..	..	17
2	Nuisances detected without complaints	..	..	..	...	159
3	Nuisances abated	..	..	..	..	115
4	Notices served	..	..	..	..	83
5	Summonses taken out	..	..	..	..	1
6	Convictions	..	..	..	..	1
7	Cottages inspected	..	..	..	..	780
8	Lodging-houses inspected	..	..	..	..	0
9	Slaughter-houses inspected	..	..	..	..	9
10	Bake-houses inspected	..	..	..	..	13
11	Dairies & milk shops inspected	..	..	..	..	15
12	Cowsheds inspected	..	..	..	..	41
13	Workshops inspected	..	..	..	..	0
14	Filthy houses cleansed, sec. 46 Public Health Act, 1875	..	..	..	..	0
15	Houses disinfected	..	..	..	..	28
16	Overcrowding abated	..	..	..	..	0
17	Houses placed in habitable repair	..	..	..	..	0
18	Houses closed	..	..	..	..	0
19	Houses erected or re-built	..	..	..	..	49
20	"Certificates" granted	..	..	..	..	0
21	„ deferred	..	..	..	..	0
22	Wells sunk or improved supplies of water afforded	..	..	..	..	0
23	Wells cleansed or repaired	..	..	..	..	10
24	Wells closed	..	..	..	..	0
25	Houses connected with sewers	..	..	..	..	16
26	„ with water mains	..	..	..	..	109
27	Earth, pail, or improved privies constructed or existing privies altered	..	..	..	..	53
28	Privies & W.C.'s repaired; W.C.'s supplied with water	..	..	..	..	0
29	Cisterns cleansed, repaired, or covered	..	..	..	..	0
30	Animals improperly kept removed	..	..	..	..	0
31	Samples of water taken for analysis	..	..	..	..	46
32	Compensation paid for destruction of bedding	..	..	..	..	30/-
33	Seizures of unsound meat, &c.	..	..	..	..	0

(Signed) HORACE G. KEYWOOD, Mem. San. Inst.,

Inspector of Nuisances.

## Building Bye-Laws.

There is continually increasing dissatisfaction with regard to the Building Bye-Laws. A considerable proportion of the plans submitted do not conform to the Bye-Laws, not because the architects and builders are ignorant of their requirements, but because, they assert, that their rigorous enforcement renders it impossible to build cottages at a reasonable cost. Rather than prevent cottages being erected, plans are from time to time approved, or at least not disapproved, which contravene the Bye-Laws. In other words, the law makers become law breakers. This is an admittedly unsatisfactory state of affairs. Either the proposed buildings are unsatisfactory and their erection should not be allowed, or they are satisfactory, in which case the Bye-Laws are ~~not~~ unnecessarily stringent.

Building Bye-Laws are necessary in Rural Districts, but it is a question whether Bye-Laws, which are specially adapted for towns, are the best which can be formulated for thinly-populated Rural Districts.

Many of the most irksome are especially designed to prevent the risk from fire, and undoubtedly are absolutely essential in populous localities. I doubt, however, whether in all the Rural Districts in the County these regulations would save one life per annum. For protecting the labourer from this infinitesimal risk, is it worth while exposing them to all the other dangers to health and to morals which arise from overcrowding, and from residing in the old dilapidated damp and cheerless cottages of which there are so many in our district?

A Bye-Law Committee has, after consultation with other District Councils, amended the existing code, and this will shortly be submitted to the Local Government Board.

## Prevalence of Infectious Diseases.

The number of cases of infectious diseases notified during the year was higher than that in 1899, owing chiefly to the prevalence of diphtheria, the cases of scarlet fever being fewer than last year. The excessive number of notifications of diphtheria was largely due to outbreaks occurring in Heybridge, Goldhanger and Woodham Mortimer. The distribution of the cases is shown in the subjoined table, from which it will be seen that no notifications were received from Althorne, Cricksea, Asheldham, St. Lawrence,



Great and Little Braxteds, Cold Norton, Hazeleigh, Ulting, Mayland, Tolleshunt Major and Knights, Mundon, and Fambridge.

	Diphtheria and Croup.	Typhoid Fever.	Erysipelas.	Scarlet Fever.	Total.
Steeple ... ..	1		1	3	5
Bradwell ... ..		2	1		3
Tillingham ... ..	1		1	1	3
Tollesbury ... ..				3	3
Tolleshunt D'arcy...	2				2
Gt. and Lt. Totham	1		4	1	6
Heybridge ... ..	17	4	1	4	26
Purleigh ... ..	1			1	2
Langford ... ..			1		1
Woodham Mortimer	12				12
Woodham Walter...			1		1
Goldhanger ... ..	8				8
Dengie ... ..		2		3	5
Southminster ... ..		2		2	4
Wickham ... ..		1			1
Latchingdon ... ..				6	6
Stow ... ..				4	4
	43	11	10	28	92

### Small Pox.

No case occurred during the year.

### Diphtheria.

During the year, 43 cases were notified, of which, all but 6 occurred in the parishes of Heybridge, Woodham Mortimer, and Goldhanger. The age and sex distribution is shown in the following table :—

	Under 1 year.	1—5	5—10	10—15	15—25	25—35	Over 35	Total.
Males ...	0	2	6, and 1 membran- ous croup.	7	1	2	1	20
Females	0	2	7	10	1	2	1	23

Although 17 of the cases occurred at Heybridge, there was no large epidemic, as is shown by the fact that two notifications were received in January, two in February, one in March, four in May,

one in October, five in November, and two in December. Eight houses were attacked, four being in the village proper, three at the Basin, and one in Broad Street Green. There was no connection discernible between the cases in the different houses. The houses themselves were in a fair sanitary condition, with the exception of the "Flat Tops," where eight of the cases occurred, and in which the arrangements are unsatisfactory, inasmuch as the privies, which are badly lighted and ventilated, open into the washhouses.

An epidemic affecting eight persons occurred at Goldhanger during August. A child in the family of an agricultural labourer was taken ill on the 17th. On the 19th, throat symptoms were observed, but Dr. Salter was not called in till the 21st, and when he arrived, the child was dead. He found, however, that three out of the six children in the house had become infected, and he promptly notified the cases, and wrote me a letter with reference thereto. I commenced enquiries in the village to ascertain if there were any other cases, or any which could be regarded with suspicion. In one house only did I find anything suspicious, and this was the case of a child who had played with the patient first affected, during the time that she was ill. As the former was one of a family of eight children, and there were no means of proper isolation in the house, I made arrangements to have the Tent Hospital erected forthwith. Within 24 hours the patients were removed and placed in charge of a nurse. Two other children in the house first infected and the mother were notified shortly afterwards, and at once sent to the tent. The last case was removed on August 25th, and in this way we succeeded in checking what might have been a serious epidemic, especially as the disease was of a severe type.

The house in which the first cases occurred was overcrowded, but otherwise it was clean, dry, and in very fair sanitary condition.

The school was closed by my advice, from September 3rd to 17th. Dr. Salter used antitoxin freely, and to his prompt action the arrest of the disease is in a great measure due.

An epidemic, affecting four houses and 12 people, occurred in Woodham Mortimer in October, and was instructive, inasmuch as it demonstrated how easily a primary source of infection may be overlooked. On October 12th, Dr. Facey notified that a girl, belonging to a family which had moved into the district a fortnight previously, was suffering from diphtheritic paralysis. I visited

the cottage, and ascertained that all the members of the family save two had had sore throats within the previous seven weeks, the last one having suffered in this manner about a fortnight before. Bacteriological examination of the throats of the children showed that the diphtheria bacillus was present, although to the naked eye, the throats appeared normal. Unfortunately, these children were attending the school, with the result that in a few days three more cases occurred among the school children. I at once advised your Council to close the school, and fortunately no further houses were attacked, although several other members of the same families were infected.

If, in the first case, the illness had not been complicated by paralysis, I should probably have been at a loss to account for the introduction of the disease.

The only other case of diphtheria to which I would call attention was notified on December 28th, and occurred on the Watch Vessel, Stansgate, Steeple. The child was dead before the doctor arrived, and owing to the impossibility of satisfactorily isolating the remaining inmates, further extension has occurred. This Watch Vessel is not suitable for continuous use as a domicile for married men with families. Proper cottages ought to be provided for the men.

In connection with the prevention of the spread of diphtheria, the use of antitoxin as a prophylactic has been advocated. The only occasions on which it has been largely used in this district have been among patients of Dr. H. R. Brown of Maldon, who employed it recently to prevent the spread of the disease among the members of three households on the occurrence of a case of diphtheria therein. In this connection I quote a letter from Dr. Brown, dated January 19th, 1901 :

“I beg to report that I have during the past quarter made considerable use of antitoxin as a prophylactic in homes affected with diphtheria in the Maldon Rural Sanitary District.”

“In Case No. 1, four young people received prophylactic doses. Two left the house, and did not receive doses. These two, and these two alone, developed the disease.”

“In Case No. 2, six injections were given. On this occasion again two members of the family were absent at the time of my visit. One of these, and none of the others, took diphtheria.”



“In Case No. 3, (a Home for Children) there were 19 inmates in the house. The disease was diagnosed when two children were ill. The other 17 all received injections, and not another case has appeared.”

“As however, antitoxin is a relatively expensive drug, and most of these people are not in a position to pay for it, and as such prophylactic measures are calculated to benefit the community at large, almost as much as the families affected, might I ask whether the Maldon Rural Sanitary Authority can see their way to defraying the expense of the treatment?”

A further illustration of the benefits apparently conferred by this mode of treatment, and also of the value of bacteriological examinations of throats during epidemics of diphtheria, has recently been furnished at Cambridge, where, what promised to be a severe epidemic of diphtheria was quickly checked by these means. The epidemic at its commencement was practically confined to children attending one school. All the children attending the school were visited at home, and bacteriological examinations made from their throats and those of their brothers and sisters. Antitoxin was offered to all such cases, the remedy being provided gratis by the Council for the medical attendants of the poorer classes. A home was provided for all children in whose throats suspicious organisms were found, and who could not be satisfactorily isolated at home, and all medical practitioners were asked to keep their patients and suspects under supervision, until three successive bacteriological examinations had given negative results. By means of these measures the epidemic soon decreased, while the value of the prophylactic use of antitoxin was shown by the fact that only one slight attack occurred among those so treated, although many of them were found to be harbouring the diphtheria bacillus, while, among the elder members of the families who had not been injected, several cases occurred.

This method of arresting the spread of diphtheria is well worthy of trial, and I would suggest that in all cases where the Medical Attendant uses antitoxin as a prophylactic, and the persons so treated belong to the working classes, a small fee should be paid for each case, to cover the cost of the remedy, and in some measure remunerate the Medical Attendant for his skill and trouble. If thought desirable, the use of the remedy should

be subject to my approval, and I would endeavour to give this approval in suitable cases as promptly as possible, as any delay would decrease the chances of success.

### Scarlet Fever.

28 cases were notified during the year, 10 parishes being affected. The age and sex distribution is shown in the following table :

	Under 1 year.	1 - 5	5—10	10—15	15—25	25—35	All Ages.
Males	0	5	7	1	2	0	15
Females	1	6	4	1	0	1	13

6 cases were notified in Latchingdon during October and November, two of the patients being inmates of one house, and four of another house at the opposite end of the parish. I was unable to ascertain how the infection was introduced into the village, but there was little doubt that the second family was infected at school. I inspected a large number of school children and discovered many cases of illness, which, although I was unable to definitely diagnose as scarlet fever, bore a strong resemblance to a mild form of the disease. The school attendance had fallen very low, and I advised your Council to close the school for about a fortnight. No further houses were attacked.

4 cases were notified in Stow Maries during November, three of which were in one house, and it was alleged that there were several more children who were suffering from the disease, and for whom no doctor was called in. I visited the houses, but, with one possible exception, was unable to find any evidence that the alleged illness was scarlet fever.

### Typhoid Fever.

Eleven isolated cases occurred during the year. Two of these were imported. At Tillingham, a girl was taken ill a few days after she had returned home from Leyton. At Bradwell, one of the cases was a bargeman, who had probably contracted the disease whilst away from home.

At Dengie, the house in which one of the cases occurred is supplied by a Well situated in soil saturated with sewage, and the water gave chemical evidence of pollution. The same was also

the case with regard to a Well in the Goldhanger road, which was used by a patient who was notified in April.

A case occurred in one of the coastguard cottages at Bradwell. The patient had not been away from home. A very foul, open drain was situated a few yards from the house. This is receiving the attention of the Council.

A drain nuisance was also found at Wickham Bishops, where there was a case of typhoid fever in August.

### Measles.

An outbreak of this disease occurred at the beginning of the year at Woodham Mortimer. Acting on my advice your Council closed the school from January 3rd to 21st.

During the same month there was an epidemic at Woodham Walter, causing the school attendance to fall considerably, but in this instance the schools were not ordered to be closed, as I did not think it necessary.

### Whooping Cough.

A few cases occurred at Heybridge in April, about 20 children being attacked.

A number of cases are now occurring in the Southminster district.

### Mortality Statistics.

DEATH RATE.—The death rate from all causes is 13·8 per 1000 population, and only once have we had a lower record. The average for the past 10 years is 15·3. A comparison of the death rates since 1890 is given in Table I, issued by the Local Government Board.

ZYMOTIC DEATH RATE.—The zymotic death rate is about the average for the last 10 years, but higher than we have had for some time past. It is 1·25 per 1000 persons. There were no deaths from measles, scarlet fever, or small pox, 7 from whooping cough, 4 from diphtheria, 3 from typhoid fever, and 6 from epidemic diarrhœa.

The zymotic death rate for the last ten years is as follows :—

Year.	Zymotic Death Rate.	Year.	Zymotic Death Rate.
1891	0·83	1896	1·1
1892	2·3	1897	0·65
1893	1·7	1898	1·15
1894	0·94	1899	1·0
1895	1·2	1900	1·25



INFANTILE MORTALITY.—During the year there were 355 births, and 40 deaths of infants under one year of age. This is equivalent to an infantile mortality of 113. This is nearly the same rate as for 1899, and in excess of the average mortality for the 10 years 1890-1899.

BIRTH RATE.—The 355 births registered during the year are equivalent to a birth rate of 22·2 per 1000 of the population, which is the lowest yet recorded for the district. This continuous decrease in the birth rate is one of the most serious features of my report. It is probably due to several causes, the chief being—

(a) A higher average age at marriage.

(b) The increasing emigration of the young and able-bodied.

(c) The decreased physique of those left behind.

Such being the case, it is obvious that in the course of a few generations the results will be deplorable.

BIRTHS AND DEATHS IN THE SUB-REGISTRATION DISTRICTS.—These are given in Tables II. and IV., issued by the Local Government Board. The Death Rate, Zymotic Death Rate, and Infantile Mortality, for the four districts, is shown in the subjoined table, from which it will be seen that while Bradwell had the smallest death rate, while the lowest zymotic death rate and infantile mortality occurred in the Tollesbury District.

		1900.			1881-99.		
DISTRICT.		Death Rate.	Zymotic Death Rate.	Infantile Mortality.	Death Rate.	Zymotic Death Rate.	Infantile Mortality.
Southminster	...	18·0	2·4	159	15·5	1·6	96
Bradwell	...	11·8	1·2	96	14·3	0·9	88
Maldon	...	14·2	1·2	164	15·8	1·0	92
Tollesbury	...	12·9	0·9	84	14·5	1·2	99

DEATHS AT VARIOUS AGES.—These are given in Table IV., issued by the Local Government Board.

DEATH RATE IN THE DIFFERENT PARISHES.—These are shewn in Table VI. The District including Steeple, Latchingdon, Mundon, and North Fambridge shows the highest death rate, whilst it is lowest in Tolleshunts Major and Knights, in which last year the mortality was greatest. The district in which Lang-

ford and the Tothams are situated again shows a high death rate, and one considerably in excess of the average for the preceding 19 years.

INFLUENZA accounted for 17 deaths, 10 of which occurred among persons of over 65 years. This is the highest figure recorded since this cause of death has been included in the tables of the Annual Reports.

PHTHISIS AND OTHER TUBERCULAR DISEASES. 19 deaths were attributed to tuberculosis, of which 13 were cases of phthisis. The Phthisis death-rate is much lower than in the country generally, notwithstanding that so much of our district consists of heavy clay land, which is generally considered to be associated with dampness and a high mortality from Consumption.

CANCER was responsible for 11 deaths, as against 16 in 1899.

PUERPERAL FEVER. No death from this cause was registered during the year. I only refer to this subject because I am informed that a paragraph in my last year's report has been misinterpreted. This arises from an ambiguous sentence, which may leave the impression that the first case occurred only a short time before the other cases were infected. The first person referred to died on August 13th and had been confined 6 weeks previously. The cases said to have been infected therefrom occurred in October, that is after an interval of at least 3 months, meanwhile both doctor and nurse appear to have attended many intermediate cases. This being so, it becomes very doubtful whether there was any connection between these several cases. The misconception arises from the date of the confinement having been given to me, or having been misunderstood by me, as being the date of death.

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The above résumé of the year's work and statistics is on the whole very satisfactory. Considerable sanitary improvements have been effected and other important ones have been considered and advanced a stage. The whole reflects great credit upon the Council, all the members of which take a great interest in the sanitary well-being of the district.

I have the honour to be, Gentlemen,

Your obedient Servant,

JOHN C. THRESH.



# TABLE I.—MALDON RURAL DISTRICT.

For whole District.

YEAR.	Population estimated to Middle of each Year.	BIRTHS.		DEATHS UNDER ONE YEAR OF AGE.			DEATHS AT ALL AGES, TOTAL.		DEATHS IN PUBLIC INSTITUTIONS.	Deaths of Non- residents registered in District.	Deaths of Residents registered beyond District.	DEATHS AT ALL AGES, NETT.	
		Number.	Rate.*	Number.	Rate per 1,000 Births registered	Number.	Rate.*	Number.				Rate.*	
1	2	3	4	5	6	7	8	9	10	11	12	13	
1890	18,344	540	29.4	60	111	275	14.9	32	0	32	307	16.7	
1891	18,099	536	29.6	51	95	273	14.8	23	1	23	295	16.2	
1892	18,099	483	26.7	56	118	283	15.3	24	0	24	307	16.8	
1893	18,099	500	27.6	45	90	238	13.1	28	0	28	266	14.6	
1894	18,099	522	28.9	46	90	266	14.2	26	0	26	292	16.1	
1895	18,139	438	24.1	47	107	250	13.8	20	0	20	270	14.9	
1896	18,203	498	27.5	55	110	223	12.2	19	0	19	242	14.3	
1897	18,269	435	23.8	41	89	219	11.9	28	0	28	247	13.5	
†1898	15,709	457	25.0	42	92	231	14.7	23	1	23	253	16.0	
1899	15,749	362	23.0	41	113	214	13.6	9	0	9	223	14.2	
Averages for years 1890—1899.	17,681	477.1	26.6	48.4	101.5	247.2	13.8	23.2	0.2	23.2	270.2	15.3	
1900	15,994	355	22.2	40	113	198	12.4	23	0	23	221	13.8	

\* Rates calculated per 1,000 of estimated population.

NOTE.—The deaths included in Column 7 of this table are the whole of those registered during the year as having actually occurred within the district or division. The deaths included in Column 12 are the number in Column 7, corrected by the subtraction of the number in Column 10 and the addition of the number in Column 11.

By the term "Non-Residents" is meant persons brought into the district on account of illness, and dying there; and by the term "Residents" is meant persons who have been taken out of the district on account of illness, and have died elsewhere.

Area of District in Acres (exclusive of area covered by water) } 81,860.

Total population of all ages, 15,622.† } Number of inhabited houses, 3,566. } At Census of 1891.

†In 1898 Burnham, which had formerly been a part of the Southminster Sub-Registration District, was converted into a separate Urban District.

‡The deaths in this Column occurred in the Union Workhouse situated in the Borough of Maldon.



TABLE II.—MALDON RURAL DISTRICT.

NAMES OF LOCALITIES.	1.—TOLLESBURY.						2.—BRADWELL.						3.—SOUTHMINSTER.						4.—MALDON.					
YEAR.	Population estimated to middle of each Year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each Year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each Year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each Year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each Year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each Year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.
1890	7336	—	120	23	2690	—	39	6	4680	—	92	20	3638	—	56	11	3353	—	53	10	3353	—	53	10
1891	7464	270	130	27	2516	70	32	4	4766	107	80	10	3353	89	53	10	3353	89	53	10	3353	89	53	10
1892	7464	182	117	27	2516	77	44	7	4766	148	89	13	3353	76	57	9	3353	76	57	9	3353	76	57	9
1893	7464	219	91	16	2516	60	36	6	4766	119	70	15	3353	102	69	8	3353	102	69	8	3353	102	69	8
1894	7464	208	112	14	2516	78	44	9	4766	149	70	13	3353	87	66	10	3353	87	66	10	3353	87	66	10
1895	7470	166	109	19	2516	63	35	7	4800	130	69	12	3353	79	57	9	3353	79	57	9	3353	79	57	9
1896	7470	194	108	25	2516	82	36	7	4864	136	55	13	3353	86	43	10	3353	86	43	10	3353	86	43	10
1897	7500	168	90	21	2516	60	38	5	4900	138	65	6	3353	69	54	9	3353	69	54	9	3353	69	54	9
1898*	7500	82	109	14	2516	56	56	10	2340	155	39	9	3353	164	49	9	3353	164	49	9	3353	164	49	9
1899	7500	179	125	25	2516	61	29	6	2380	43	42	7	3353	79	27	3	3353	79	27	3	3353	79	27	3
Averages of Years 1891 to 1899.	7477	185	110	21	2516	67	39	7	4260	125	64	11	3353	92	53	9	3353	92	53	9	3353	92	53	9
1900	7590	178	98	15	2541	52	30	5	2495	61	45	10	3368	64	48	10	3368	64	48	10	3368	64	48	10

NOTES.—(a) The separate localities adopted for this table are the registration sub-districts.

(b) Deaths of residents occurring beyond the district are included in sub-column *c* of this table, and those of non-residents registered in the district excluded.

(c) Deaths of residents occurring in public institutions are allotted to the respective localities, according to addresses of the deceased.

\* In 1898 Burnham which had formerly been included in the Southminster Sub-registration District, was converted into a separate Urban District.

TABLE III.—MALDON RURAL DISTRICT.

Cases of Infectious Disease notified during the year 1900.

NOTIFIABLE DISEASE.	CASES NOTIFIED IN WHOLE DISTRICT.							TOTAL CASES NOTIFIED IN EACH LOCALITY.			
	At all Ages.	Years.						Tollesbury.	Bradwell.	South-minster.	Maldon.
		Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 65.	65 and upwards.				
Small-pox	...	...	...	...	...	...	...	...	...	...	...
Cholera	...	...	...	...	...	...	...	...	...	...	...
Diphtheria	42	0	4	30	2	6	0	28	1	0	13
Membranous croup	1	0	0	1	0	0	0	0	0	1	0
Erysipelas	10	0	0	2	1	7	0	5	2	1	2
Scarlet fever	28	1	11	13	2	1	0	8	4	5	11
Typhus fever	0	0	0	0	0	0	0	0	0	0	0
Enteric fever	11	0	0	3	3	4	1	5	4	2	0
Relapsing fever	...	...	...	...	...	...	...	...	...	...	...
Continued fever...	...	...	...	...	...	...	...	...	...	...	...
Puerperal fever	...	...	...	...	...	...	...	...	...	...	...
Plague	...	...	...	...	...	...	...	...	...	...	...
Totals	92	1	15	50	8	17	1	46	11	9	26

NOTE.—The localities adopted for this table are the same as those in Tables II. and IV.

TABLE IV.—MALDON RURAL DISTRICT.  
Causes of, and Ages at, Death during Year 1900.

CAUSES OF DEATH.	DEATHS IN WHOLE DISTRICT AT SUBJOINED AGES.							DEATHS IN LOCALITIES AT ALL AGES.				DEATHS IN PUBLIC INSTITUTIONS.
	All ages.	Under 1.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 & upwards.	Southminster.	Bradwell.	Maldon.	Tollesbury.	
Small-pox ... ..	...	...	...	...	...	...	...	...	...	...	...	...
Measles ... ..	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet fever ... ..	...	...	...	...	...	...	...	...	...	...	...	...
Whooping cough ... ..	7	6	1	...	...	...	...	2	...	2	3	...
Diphtheria and membranous croup ... ..	4	...	1	3	...	...	...	1	1	...	2	...
Croup ... ..	...	...	...	...	...	...	...	...	...	...	...	...
Fever { Typhus ... ..	...	...	...	...	...	...	...	...	...	...	...	...
	...	...	...	...	...	...	...	...	...	...	...	...
	3	...	...	...	1	1	1	1	2	...	...	...
Other continued ... ..	...	...	...	...	...	...	...	...	...	...	...	...
Epidemic influenza ... ..	17	1	...	2	...	4	10	6	...	5	6	...
Cholera ... ..	...	...	...	...	...	...	...	...	...	...	...	...
Plague ... ..	...	...	...	...	...	...	...	...	...	...	...	...
Diarrhœa ... ..	6	5	...	...	...	...	1	2	...	2	2	...
Enteritis ... ..	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal fever ... ..	...	...	...	...	...	...	...	...	...	...	...	...
Erysipelas ... ..	1	...	...	...	...	...	1	1	...	...	...	...
Other septic diseases ... ..	...	...	...	...	...	...	...	...	...	...	...	...
Phthisis ... ..	13	...	...	1	1	10	1	3	1	3	6	1
Other tubercular diseases ... ..	6	3	1	1	...	...	1	...	2	1	3	1
Cancer, malignant disease ... ..	11	...	...	1	...	7	3	...	2	2	7	...
Bronchitis ... ..	11	1	...	1	...	...	9	3	2	1	5	1
Pneumonia ... ..	16	5	3	1	...	4	3	2	3	2	9	...
Pleurisy ... ..	...	...	...	...	...	...	...	...	...	...	...	...
Other diseases of Respiratory organs ... ..	1	...	...	...	...	...	1	1	...	...	...	...
Alcoholism, Cirrhosis of liver ... ..	2	...	...	...	...	2	...	...	2	...	...	...
Venereal diseases ... ..	...	...	...	...	...	...	...	...	...	...	...	...
Premature birth ... ..	3	3	...	...	...	...	...	...	1	1	1	...
Diseases and accidents of parturition ... ..	1	...	...	...	...	1	...	...	...	1	...	...
Heart diseases ... ..	23	1	...	2	1	6	13	2	5	9	7	3
Accidents ... ..	8	...	...	1	...	3	4	4	2	1	1	1
Suicides ... ..	...	...	...	...	...	...	...	...	...	...	...	...
All other causes ... ..	88	15	3	1	4	12	53	17	7	18	46	16
All causes ... ..	221	40	9	14	7	50	101	45	30	48	98	23



TABLE V.—MALDON RURAL SANITARY DISTRICT.  
 Table of Meteorological Data, Deaths, Infectious Diseases, &c., for Year ending Dec. 31st, 1900.

1900		Meteorological Data.					Deaths, all Causes.			Deaths from Zymotic Diseases.								Infectious Diseases Notified.							
Month.		Mean Temperature.	Mean daily range of Temperature	Relative Humidity.	No. of Rainy Days.	Rainfall in inches.	Total Deaths.	Under 1 Year.	Over 65 Years.	Smallpox	Scarlet Fever.	M. Group and Diphtheria.	Fever.	Diarrhoea.	Erysipelas.	Whooping Cough.	Measles.	Total.	Small Pox.	Scarlet Fever	Croup and Diphtheria.	Fever.	Erysipelas.	Total.	
January		38.6	11.2	89	19	2.83	38	5	23	—	—	1	—	—	—	—	—	1	—	—	4	—	2	6	
February		37.3	12.0	92	19	3.16	22	4	9	—	—	—	—	—	—	—	—	—	—	2	—	—	—	8	
March		38.1	13.2	80	8	0.89	15	2	9	—	—	—	—	—	—	—	—	0	—	—	2	—	—	2	
April		46.8	20.0	72	7	0.73	20	5	8	—	—	—	—	—	1	2	—	3	—	4	—	1	7		
May		51.1	18.2	72.5	10	0.83	18	7	4	—	—	—	—	—	—	2	—	2	—	1	4	2	8		
June		59.6	18.8	73.5	18	2.195	9	1	3	—	—	—	—	—	—	—	—	0	—	1	—	—	1		
July		65.9	24.4	63	5	0.84	21	3	10	—	—	—	—	—	—	—	—	0	—	1	—	—	1		
August		60.2	18.0	73	13	2.555	22	7	7	—	—	1	—	5	—	3	—	9	—	2	7	2	12		
September		57.5	21.35	81	4	0.713	15	1	9	—	—	—	1	—	—	—	—	1	—	1	—	2	3		
October		50.6	15.7	80.5	12	1.467	16	2	10	—	—	1	2	1	—	—	—	4	—	4	16	2	22		
November		45.39	10.21	89	21	1.652	14	3	5	—	—	—	—	—	—	—	—	0	—	11	4	—	15		
December		44.3	12.0	88	21	2.309	11	0	4	—	—	1	—	—	—	—	—	1	—	1	3	2	7		
Means and Totals		1900	49.6	16.3	79.4	157	221	40	101	—	—	4	3	6	1	7	0	21	—	—	28	43	11	10	92
		1899	49.14	17.36	80.5	146	23.075	223	41	93	—	1	—	2	7	—	4	3	17	—	41	16	12	6	75
		1898	49.75	16.25	82.7	133	16.65	253	42	118	—	—	1	4	9	—	3	2	19	—	26	4	18	12	60
		1897	48.4	15.55	81.4	152	22.14	247	41	129	—	1	—	—	8	—	3	—	12	—	26	8	7	4	45
		1896	49.01	16.18	81.3	145	24.10	261	55	107	—	—	3	4	—	3	9	1	20	—	28	14	17	11	70
		1895	48.2	17.2	83.8	144	270	47	116	1	—	7	4	6	—	—	3	21	8	37	34	14	5	98	
		1894	47.1	15.7	83.7	197	292	46	123	3	—	6	4	—	1	4	—	18	15	32	17	10	14	88	
		1893	49.8	18.5	81.3	150	266	45	109	—	—	7	5	9	2	1	8	32	1	75	57	17	14	164	
		1892	47.2	16.55	84.3	162	306	56	117	—	—	7	1	6	1	19	12	46	—	11	128	13	12	164	

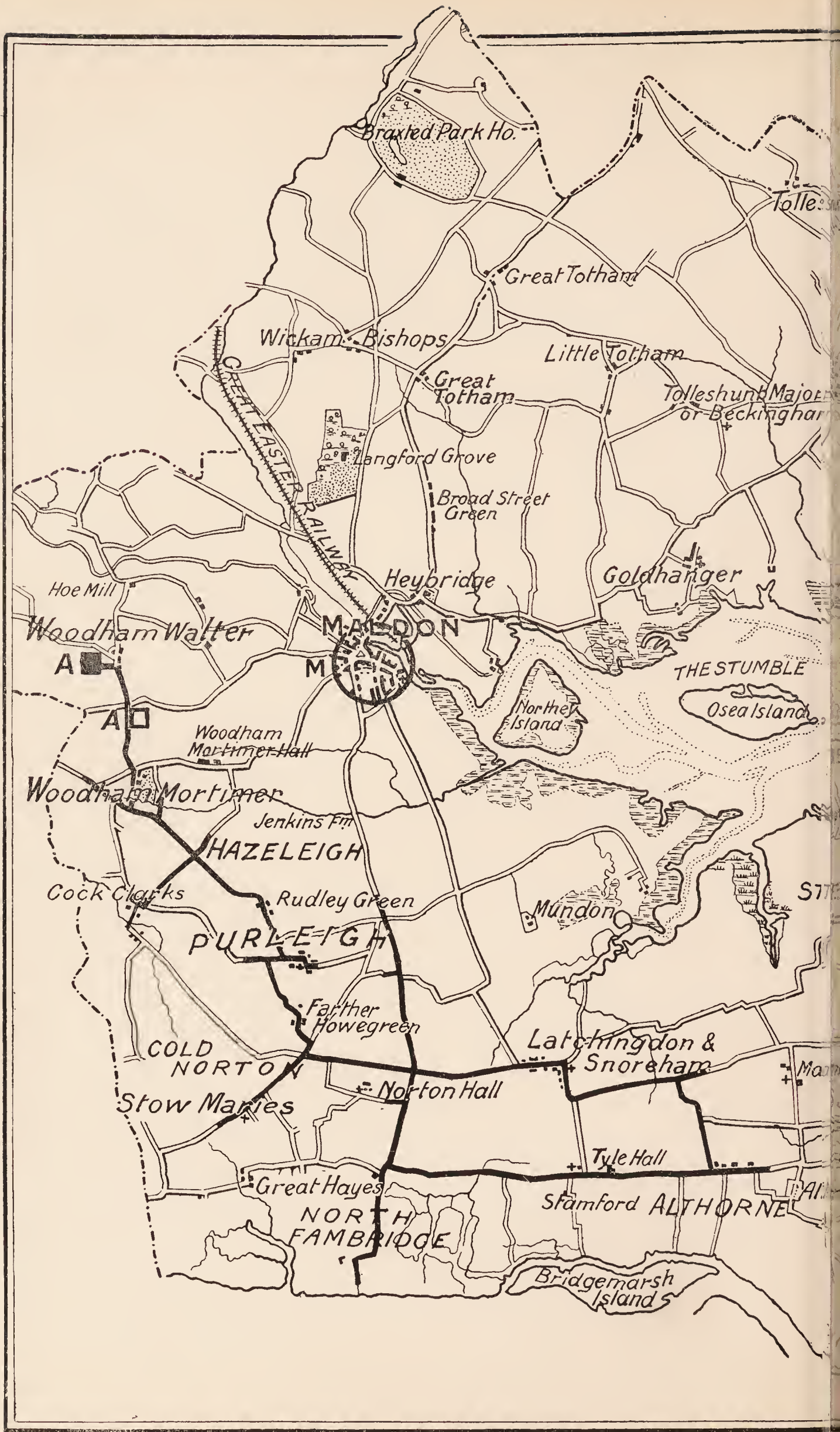
TABLE VI.  
DEATH-RATES IN THE PARISHES, 1900.

PARISHES.			1900	DEATH RATE.—Mean for 19 years, 1881—99.
			All causes.	All Causes.
1	Asheldham, Dengie, and St. Lawrence	...	8.9	9.9
2	Tollesbury ...	...	10.5	12.5
3	Langford and the Tothams ...	...	21.5	14.9
4	Heybridge ...	...	16.0	15.4
5	Tillingham ...	...	13.7	16.4
6	Woodham Walter and Mortimer ...	...	9.9	15.0
7	Cold Norton, Stow, Purleigh, and Hazeleigh	...	14.5	16.8
8	Bradwell-on-Sea ...	...	12.1	17.1
9	Cricksea, Althorne, and Mayland ...	...	13.3	15.3
10	Goldhanger and Tolleshunt D'Arcy ...	...	12.6	14.6
11	Southminster ...	...	16.9	16.9
12	Ulting, Wickham Bishops, Great and Little Braxted	...	11.5	15.4
13	Tolleshunt Major and Knights ...	...	4.5	14.4
14	Steeple, Latchingdon, Mundon, and North Fambridge	...	22.1	16.7

These death rates are calculated from the number of deaths which have actually occurred in the parishes,  
to which have been added the deaths occurring in the Union Workhouse of paupers belonging  
to the parishes.







# MAP SHEWING PUBLIC WATER SUPPLIES IN THE MALDON UNION.

A ■ — Pumping Station at Woodham Walter

A □ — Reservoir at Woodham Walter  
Mains supplying 8 Parishes.

B ■ — Pumping Station (Tower Southminster  
Water Works

C ■ — " at Burnham Water Works.

M Maldon Corporation Waterworks.

